

## Abstract

A process is described for the location-resolved simultaneous detection of the adhesion and friction as well as possibly of other material properties of a sample surface (30) to be examined by means of a raster probe microscope comprising a raster probe (1). The raster probe (1) and/or the sample (25) with sample surface (30), are moved here until at a point (34) of the sample surface (30) to be examined the raster probe (1) interacts in a determined manner with this surface. The raster probe (1) and/or the sample (25) are subjected here to a vertical oscillation, and a first measuring signal characterized by the deformation of the raster probe (1) is recorded. Furthermore, a second measuring signal characterizing the deformation of the raster probe (1) is recorded, wherein the raster probe (1) and/or the sample (25) are subjected to a horizontal and/or vertical oscillation. From these two measuring signals, now, by means of a suitable evaluating arrangement the desired material properties are determined. For the detection of the entire surface area to be examined the raster probe (1) and or the sample (25) are again moved and for the repetition of the measuring process described brought into contact with the sample surface (30) in the above described manner. A suitable raster probe microscope is described for the execution of this process.